United States Department of Agriculture | Forest Service | Region 3 | 517 Gold Avenue, SW Albuquerque, NM 87102

Reply To: 3420 Pest Management Evaluations

Date: June 9, 1986

Subject: Western Spruce Budworm

To: Forest Supervisor, Lincoln NF

During the weeks of May 26 and June 2, Forest Pest Management personnel conducted a western spruce budworm (WSB) larval density survey on portions of the Lincoln National Forest and Mescalero Apache Indian lands. The primary objectives of this survey were: 1) provide data to estimate the 1986 WSB population trend; and 2) provide follow-up data on the lasting effects of the 1984 WSB Suppression Project. A secondary objective was to determine WSB larval population densities and establish baseline data for trends in unsprayed areas around Ruidoso where the current WSB infestation has been causing defoliation since 1982.

The original suppression project area was divided into 25 spray blocks (Figure 1), ranging in size from 6,000 to 11,000 acres. Of these 25 blocks, the following 10 were sampled in 1985 and again during the present, 1986, survey: Baird, Cloudcroft, Cooley, Firman, James Canyon, La Luz, Pumphouse, Sawmill, Turkey Pen, and Wayland. Areas around Ruidoso were sampled for the first time during this survey. Block selection was based on past information and management concerns provided by you and your staff.

Thirteen plots were sampled within each block (14 in Cooley and 8 around Ruidoso). For comparability, these plots were located in close proximity to plots previously sampled in 1984 and 1985. Approximate plot locations are shown in Figures 2-4. Because of the low population levels, only the odd-numbered plots were sampled in 1986. (all eight Ruidoso plots were sampled). Each plot consisted of three codominant Douglas-fir, 30 to 50 feet tall and located within two chains of each other.

The larval sampling procedure consisted of cutting one 45-cm branch from the midcrown of each sample tree, then totaling the number of budworm larvae and the number of new shoots or buds per branch. These totals were then averaged and expressed as the number of WSB per 100 buds of foliage per plot.

Results of this survey are presented in the enclosed table. Mean larval densities for 1986 are below 0.35 per 100 buds in each of the sampled spray blocks, indicating objectives of the 1984 Suppression Project continue to be met. This low level population will cause no visible defoliation in these areas during 1986. In contrast, WSB population densities in the untreated areas around Ruidoso average

nearly 15 larvae per 100 buds. Therefore, moderate to heavy defoliation can be expected in these areas during the next few weeks. Areas and intensity of defoliation will be determined during our aerial detection surveys scheduled for early July.

Even though WSB populations are currently at low levels in the treated blocks, we plan annual monitoring over these same areas to further document the lasting effects of the 1984 WSB Suppression Project; to detect if and when the population increases to outbreak levels; and to monitor WSB population trends in the unsprayed areas around Ruidoso.

DOUGLAS L PARKER

DOUGLAS L. PARKER
Director of Forest Pest Management

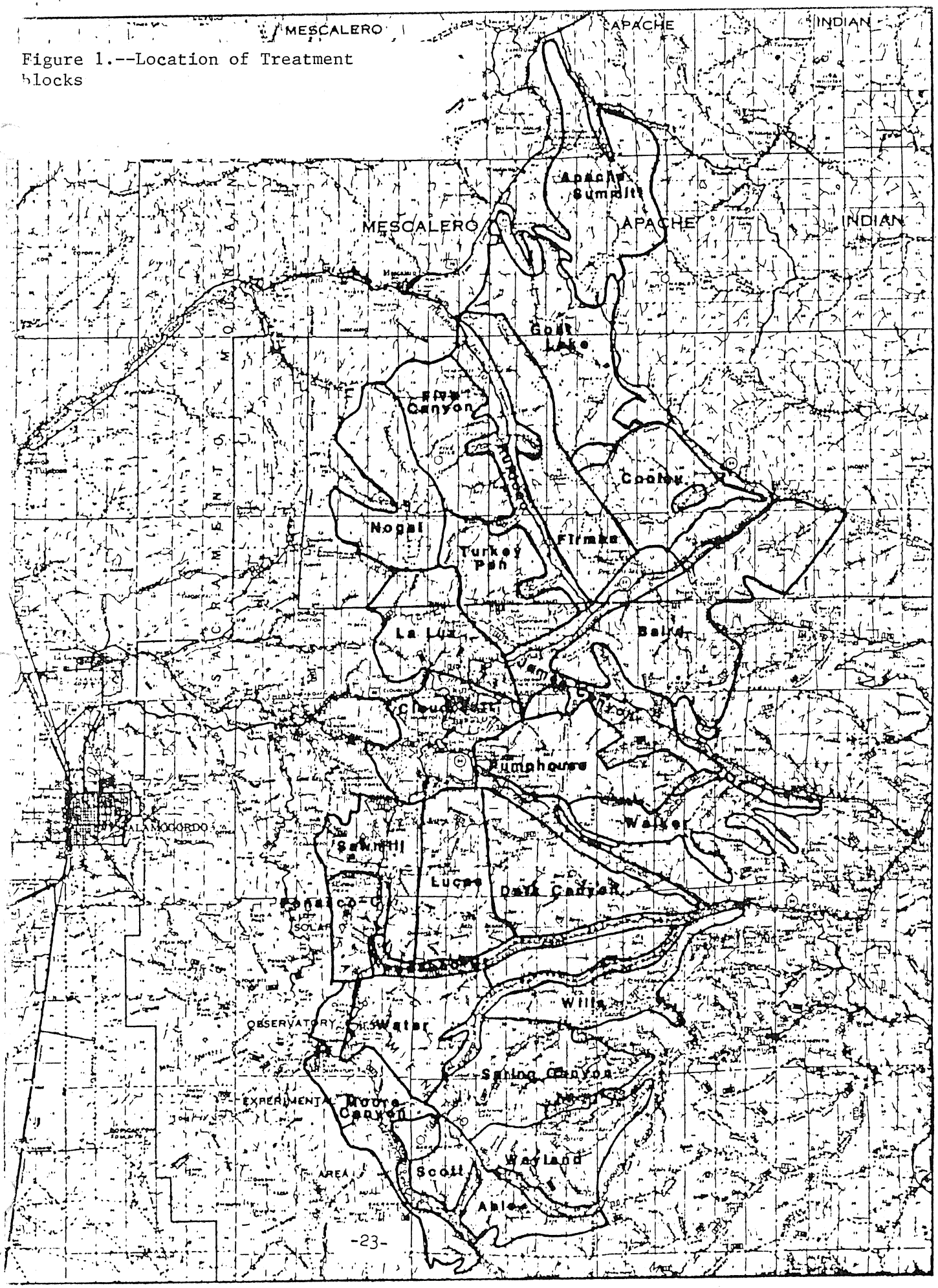
Enclosures (5)

cc:
Area Director, BIA Albuquerque
Agency Forester, Mescalero Apache IR, Mescalero

DLParker:lst

ampling Unit	1984 Post Treatment Larval Estimate		1985 Larval Estimate		1986 Larval Estimate	
	Sample Size	Larvae/100 buds +S.E.	Sample Size	Larvae/100 buds +S.E.	Sample Size	Larvae/100 b +S.E. .05
Cloudcroft	23	5.24 ± 0.59	17	0.29 ± 0.10	13	0.33 ± .45
La Luz	25	8.54 ± 0.88	16	0.40 ± 0.18	13	0.10 ± .21
James Canyon	25	3.74 ± 1.27	20	0.36 ± 0.11	13	0.14 ± .09
Turkey Pen	25	1.77 ± 0.37	10	0.28 ± 0.12	13	0.08 ± .18
Firman	25	3.05 ± 0.63	10	0.30 ± 0.25	13	0.0
Pumphouse	25	7.30 ± 1.8	11	0.42 ± 0.16	13	0.0
Wayland	25	7.16 ± 1.11	22	0.25 ± 0.08	13	0.34 ± .21
Sawmill	25	0.84 ± 0.22	17	0.26 ± 0.10	13	0.05 ± .1
Scott Able	25	4.14 ± 0.95	4	1.47 ± 0.17	NOT SAMPLED	
Baird	14	3.50 ± 0.56	13	0.13 ± 0.06	13	0.1 ± .15
Cooley	13	1.91 ± 0.30	7	0.06 ± 0.06	14	0.08 ± .11
.uidoso	NOT SAMPLED		NOT SAMPLED		8	14.81 ± 4.67

Figure 1.--Location of Treatment blocks



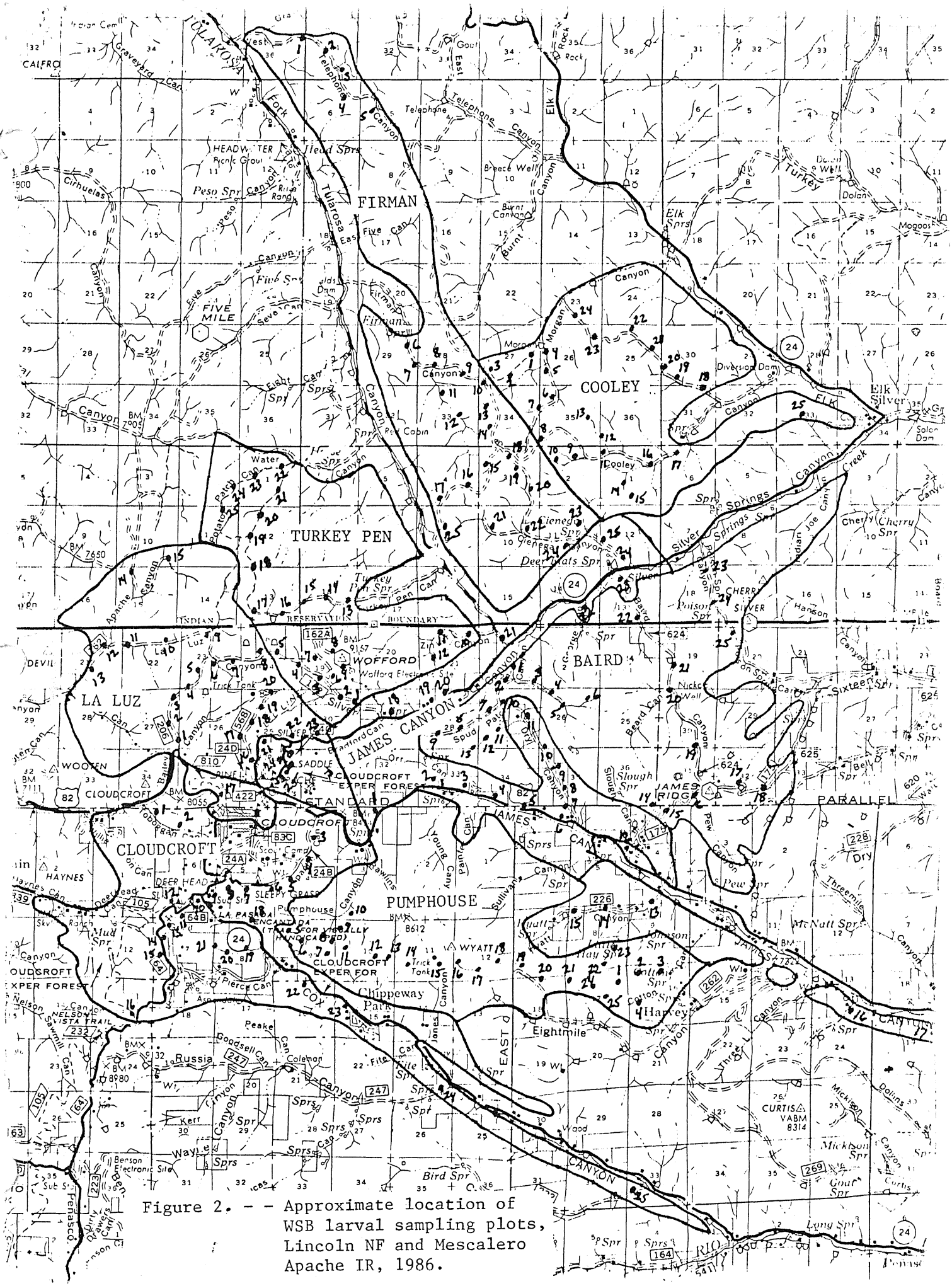


Figure 2. - - Approximate location of WSB larval sampling plots, Lincoln NF and Mescalero Apache IR, 1986.

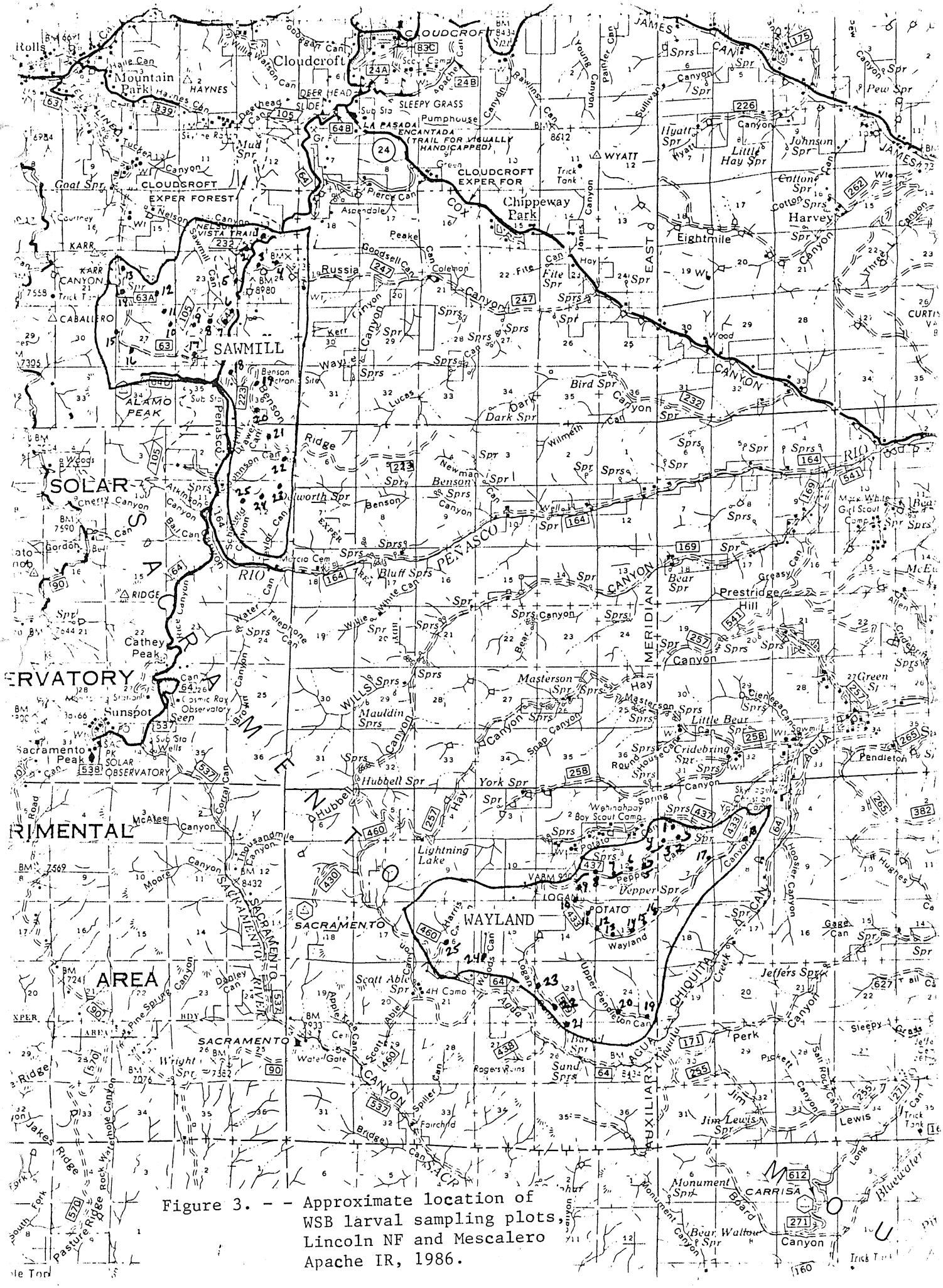


Figure 3. - - Approximate location of WSB larval sampling plots, Lincoln NF and Mescalero Apache IR, 1986.

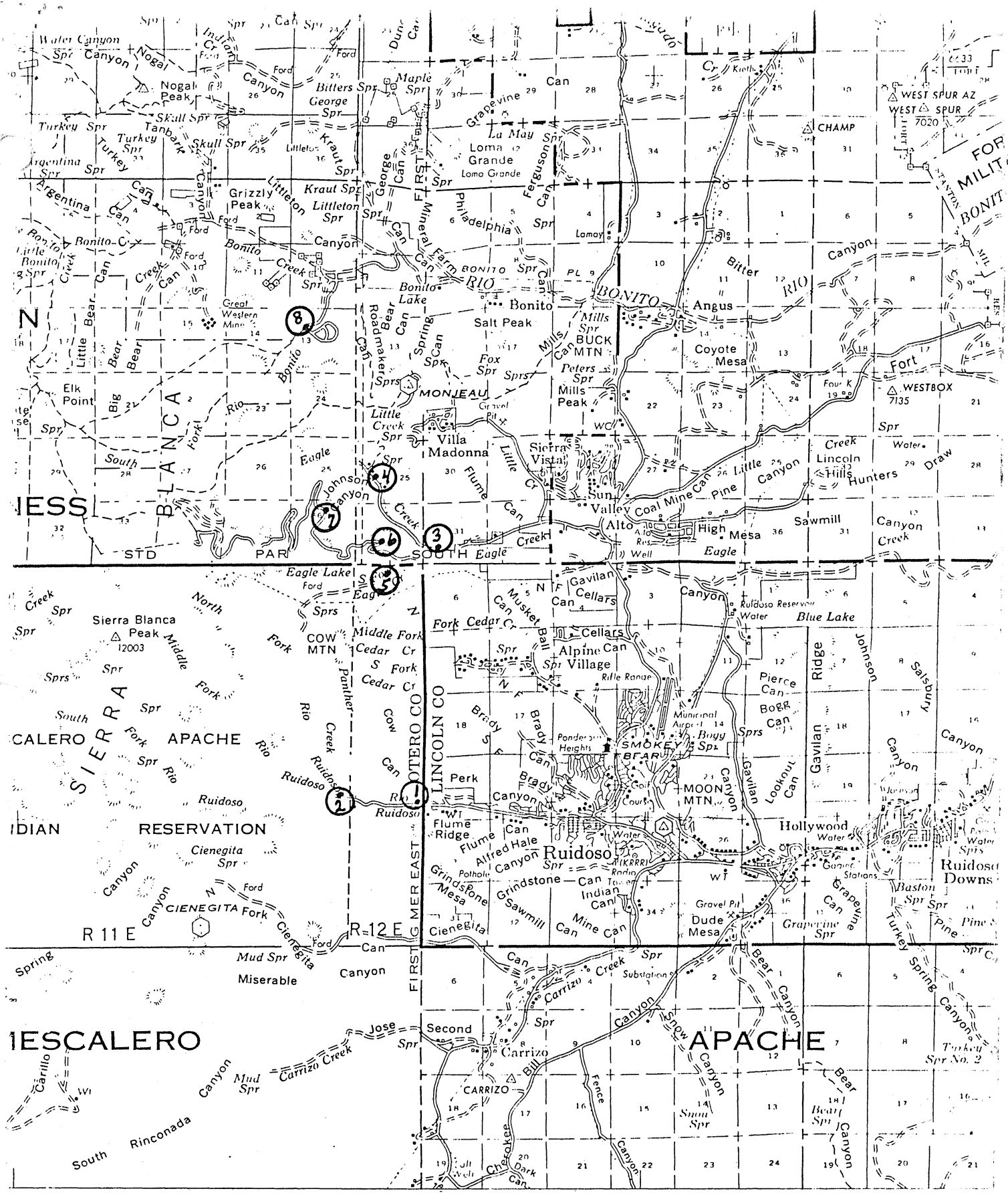


Figure 4.--Approximate location of WSB larval sampling plots, Lincoln NF and Mescalero Apache IR, 1986.